Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
The 4.9 GHz Band Transferred from	)	
Federal Government Use	)	WT Docket No. 00-32
	)	
	)	
	)	
	)	

COMMENTS OF THE CITY OF NEW YORK

OVERVIEW

The City of New York ("City"), hereby submits these comments in response to the Second Report and Order and Further Notice of Proposed Rulemaking ("Second NPRM") released by the Federal Communications Commission ("Commission") in the above captioned proceeding. The City applauds the Commission's conclusion that "the public interest would best be served by designating the 4.9 GHz band for use in support of public safety,"[1] and its designation of the 4940-4990 MHz band for this critical purpose.[2] The City concurs with the Commission that major opportunities exist to implement emerging broadband technologies, both mobile and fixed, to advance the vital

[1] *The 4.9 GHz Band Transferred from Public Safety Use*, WT Docket No. 00-32, Second Report and Order and Further Notice of Proposed Rulemaking (rel. Feb. 27, 2002) (*Second NPRM*), ¶ 23.
[2] *Id.*, ¶ 9.

mission of first and second emergency responders in the 4.9 GHz band.[3] In this regard, the City reiterates its position that additional public safety spectrum is sorely needed.[4] The 4.9GHz allocation will help to address a portion of this problem.[5]

The City's positions and concerns, in responding to this Second NPRM, are outlined below. To summarize:

- Eligibility should be restricted, with flexibility, to traditional public safety entities and authorized organizations defined in Section 337(f) of the Balanced Budget Act of 1997[6] (as it there pertains to 700 MHz eligibility).

- Fixed operations should, at minimum, be permitted on a secondary basis in the 4.9 GHz band. In certain jurisdictions or circumstances, local public safety needs might best be addressed by adopting fixed systems as a primary solution.

- Of the channelization schemes presented to date, and absent a more fully developed record at this stage of the proceeding, the principle of dividing the available spectrum into two 20-25 MHz blocks appears to be most practicable.

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[3] *See Id*.

[4] *See* Comments of the City of New York (June 17, 2001), *Improving Public Safety Communications in the 800 MHz Band and Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels*, WT Docket No. 02-55, FCC No. 02-81, Notice of Proposed Rulemaking (rel. Mar. 14, 2002). The City also concurs with commenters' concerns, noted in paragraph 26 of the Second NPRM "that the 700 MHz band provides insufficient channel bandwidth and is not presently available for accommodating broadband, short-range communications supporting high speed data and video traffic."

[5] The City notes here that for certain applications where greater wall penetration or other unique characteristics may be necessary, other frequencies in lower bands provide invaluable tools for first responders. The 4.9 GHz spectra will be a valuable supplement.

[6] Balanced Budget Act of 1997, Pub. L. No. 105-33, 111 Stat. 251 (1997) (BBA-97).

- Generally, appropriately configured regional planning committees appear to provide the most efficient means of planning for licensing mobile use. In limited cases, jurisdictions that can conduct necessary interference studies and frequency mapping surveys should be permitted to immediately use the spectrum for critical needs.

- As a harbor city, the New York is particularly concerned that the Navy's Cooperative Engagement Capability system could cause interference to the City's future 4.9 GHz fixed or mobile systems. The City, therefore, strongly encourages development of build-out standards and usage coordination to prevent such disruption.

- The Commission should consider forming a task force to develop broadband data interoperability standards for mobile equipment. Based on task force standards, regional planning committees could then coordinate and manage the spectrum. The City also suggests that IEEE 802.11 wireless local area network standards should be examined for use as a "baseline" model.[7]

- Due to the characteristics of the 4.9 GHz bandwidth, it would appear that traditional high-site public safety systems would not be the most efficient system design. Medium- to low-site, medium- to low-power systems could provide greater utility as a means of addressing public safety needs.

[7] *See Second NPRM,* ¶ 65.

I. ELIGIBILITY

The City proposes use of Section 337(f) of the Balanced Budget Act of 1997[8] ("Act') for determining threshold eligibility to use the 4.9 GHz band. Employing Section 337(f) will help to ensure that the public safety community has sufficient, interference-free use of this new public safety spectrum at all times. At the same time, however, the City recognizes the potential public safety benefits associated with broadening eligibility to "public safety radio services," as defined in Section 309(j)(2) of the Act,[9] and, potentially, of allowing commercial licensees to provide certain types of "entrepreneurial" support to public safety entities. Therefore, the Commission should explore possible mechanisms for providing public safety licensing bodies with some level of authority to delegate access to the 4.9 GHz frequency to Section 309(j)(2) entities and to commercial licensees supporting public safety entities.

Taking into account the current security climate, and the ongoing process of assessing the City's own expanded public safety requirements, the City is not at this time prepared to advocate commercial use of the 4.9 GHz public safety spectrum. The City is primarily concerned that permitting commercial use on the band could result in significant interference deriving from interleaving, or non-contiguous channelization plans, as has occurred in the 800 MHz spectrum.

[8] 47 U.S.C. § 337(f)(1).
[9] 47 U.S.C. § 309(j)(2).

If, however, it is determined that commercial use of the spectrum should be allowed, then measures (including, but not limited to, installation of guard bands) must be implemented to prevent interleaving and non-contiguous channelization. Additionally, any commercial use in those frequencies closest to the guard bands, or to public safety use, should be low-power mobile. Fixed-site commercial operations should, as much as possible, be restricted to the frequencies furthest away from the public safety use, and restricted to lower-power applications.

II. FIXED AND MOBILE USE OF THE 4.9 GHz BAND

The City envisions future applications utilizing both fixed and mobile technologies, depending upon the specific public safety needs presented in particular locales. Reserving a broad segment of the band for mobile operations ensures the ability to utilize emerging wireless technologies for on-scene responder emergency situations. Fixed operations would, however, potentially provide fire, police and emergency entities with additional, sophisticated tools for responding to crisis situations.

A number of fixed and mobile applications for the Fire Department of New York ("FDNY") and for the New York City Police Department ("NYPD"), for example, include the following:

1. Wireless, on-scene, in-building location tracking of firefighter personnel at the scene of emergency operations.

2. Wireless, on-scene tracking of a firefighter's vital body statistics to evaluate and react to bodily responses to stressful emergency operations.

3. Wireless, on-scene command board operations which would enable the tracking and collation of all resources, both human and material, at the scene of an incident whereby incident commanders could more readily and efficiently conduct fire operations while being able to manipulate, track, download and transmit critical information to and from the scene of an incident.

4. Wireless transmission of a building's status (fire alarm information, sprinkler activation, smoke alarm activation, etc.) to incoming FDNY units which would improve FDNY's ability to determine the extent and more precise location of an emergency incident within a building or complex.

5. Transmission of video via a police officer or a remotely controlled robotic device to the NYPD Incident Commander at the Command Post from a building with, for example, a bomb threat. If connectivity were established from the scene to the centralized databases through landline or other connection, then remote access to this data would be available to the front line officer.

6. Permanent establishment of wireless local area networks ("WLANs") at local "hot spots": locations where incidents requiring a large NYPD

response are likely to occur due to large numbers of people passing through on a daily basis (i.e., airports and major commuter facilities). With the installation of 4.9 GHz fixed WLANs in critical locations, permanent connectivity to remote databases could be maintained. When an incident occurred in the vicinity, the WLAN could be activated from a central control point and all first responders would have access to the WLAN for the duration of the incident. The WLAN connected to the remote databases would provide units arriving on the scene with immediate access to critical data. Surveillance cameras could be permanently installed enabling arriving units to have instant video access.

7. Transmission of real time video from pre-positioned and portable cameras as well as large-scale data transfers between portable and mobile units to the NYPD Command Post. Connectivity from the Command Post to remote data facilities could be achieved via wire line or broadband wireless technology set up in a temporary location in advance of a scheduled event or in the event of a rescue or recovery effort. A 4.9 GHz frequency, once established, could provide rescue and other emergency responders with valuable broadband capability for the duration of the operation.

The City further believes that the decision to permit local fixed operations must in part depend upon the frequency coordination methodology chosen. As a general rule, local

governmental licensing authorities should be given maximum discretion to determine the extent of fixed and mobile use on the 4.9 GHz band; provided, however, that fixed operations should be permitted only to the extent that they cause no interference with mobile operations in neighboring jurisdictions. Without such precautions, and perhaps even if such measures are adopted, fixed use should be made secondary to mobile use on a case-by-case, region-specific basis.

III. CHANNEL PLAN

The City preliminarily endorses the band segmentation principle of dividing the available spectrum into two 20-25 MHz blocks. The City notes, in this regard, that such preliminary endorsement may be modified by empirical evidence developed and presented in the record of this proceeding.

IV. LICENSING

Recognizing the need for a coordinated licensing process to help avoid adjacency interference issues, the City generally supports the use of regional planning committees (RPC) for mobile licensing in the 4.9 GHz band. At the same time, the City believes that in certain, limited circumstances it may be reasonable for an RPC member jurisdiction to build a mobile or fixed system in the 4.9 GHz band without causing interference to other jurisdictions. Where this is possible, the City believes that such RPC member jurisdiction

should be allowed to undertake such a build-out immediately, independent of the potentially lengthy process of RPC planning and licensing.

Thus, for example, for cities with the resources to conduct interference studies and frequency mapping surveys, the Commission should accommodate 4.9 GHz system build-outs to meet critical needs. This would promote timely responses to current homeland security issues and to emergency situations. Accordingly, the Commission should consider issuing Special Temporary Authority for municipalities with the resources to put such systems in place as soon as feasible.

Finally, the City believes that frequency coordination in the 4.9 GHz band might most effectively be administered through a coordinating body whose primary mission is to promote the interests of public safety and national security. Otherwise, public safety licensees could find themselves at a disadvantage in "competing" with commercial entities in securing their critical spectrum rights.

V. INTERFERENCE

The City of New York, as a harbor city, recognizes possible interference to and from the adjacent United States Navy ("U.S. Navy") band. Mechanisms must be established for build-out and usage coordination of the bandwidth. Coordination is necessary to mitigate any potential interference issues with the U.S. Navy. Additionally, the City has concerns

about the possible extent of interference from bordering municipalities and from potential intra-municipal users that are not subject to direct municipal control.

VI. TECHNICAL STANDARDS GENERALLY

The City urges the Commission to establish technical standards that will facilitate standard public safety response protocol patterns of first respondents and emergency mitigation entities and systems.

Based upon experience, the City believes that both mobile and fixed operations have potential uses for first and second responders in the City of New York. Mobile operations such as telemetry and full motion video can be extremely valuable for exercise of off-site command, control and communications and for on-scene first responder aid. Conversely, fixed-site operations can be critical for maintaining data networks for use by and between first and second responders, and by and between site coordinators and command centers. Fixed-site operations may also, in certain configurations, provide vital backup to municipal hardwired broadband or telephony systems.

Finally, in the interest of heightened security, technical standards for both mobile and fixed operations within the 4.9 GHz bandwidth should, ideally, be designed to include C3 equivalent user-level security and authentication processes.

VII. TECHNICAL STANDARDS FOR MOBILE EQUIPMENT

As noted, the Commission should consider forming a task force to develop broadband data interoperability standards for mobile equipment. Additionally, the City supports a regional planning committee role in developing localized broadband data, telemetry and audio application interoperability based on the task force standards. The City preliminarily believes that the Commission should consider modeling such standards on IEEE 802.11 WLAN standards.[10] These standards have been established and in use since 1997, the essential characteristics of the equipment are well known, and products using this standard are widely available from many vendors. This system also supports data rates of 6-54 Mbps @ 5 GHz for wireless video, data, WLAN and Personal Area Networks ("PANs") applications needed for enhanced incident response by public safety entities. The City additionally supports the use of technologies and spectrum designed to promote efficiency use of the 4.9 GHz spectrum. Dynamic Frequency Selection and Transmitter Power Control, for example, promote spectrum efficient and mitigate interference and the Commission should consider imposing these or similar spectrum efficient and interference mitigation standards.

[10] *See Second NPRM,* ¶ 65.

VIII. TECHNICAL STANDARDS FOR FIXED PUBLIC SAFETY OPERATIONS IN THE 4.9 GHz BAND

The City of New York believes that fixed-site public safety operations should, presumptively, be medium-power and low-site in nature. High-site, high-power systems in the 4.9 GHz band could create interference with the mobile or fixed-site systems of neighboring public safety operations. The City conjectures that the most efficient implementation of such systems may be facilitated via localized WLANs and PANs (although such systems may be internetworked back to a command, control and communication center via medium-power fixed locations). Consequently, the City believes that any technical standards might most profitably be focused upon such implementations, rather than upon traditional public safety system models.

CONCLUSION

In the interest of homeland security, and in response to development of broadband technologies, the City of New York applauds Congress and the Commission's decision to allocate contiguous spectrum to the public safety community for development of state-of-the-art technologies. The City is confident that the Commission will implement a licensing scheme that will best protect the needs of local authorities responding to emergencies. The City believes the most efficient way to preserve the integrity of the spectrum as a meaningful resource for first responders is to limit allocation of this valuable resource to traditional emergency personnel. At the same time, the City believes

public safety licensing bodies should be provided with authority to expand eligibility to other critical responders on an "as needed" basis. Finally, the band should be allocated for both fixed and mobile use, as determined on a region-specific, case-by-case basis.

Respectfully submitted,

/s/_____

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